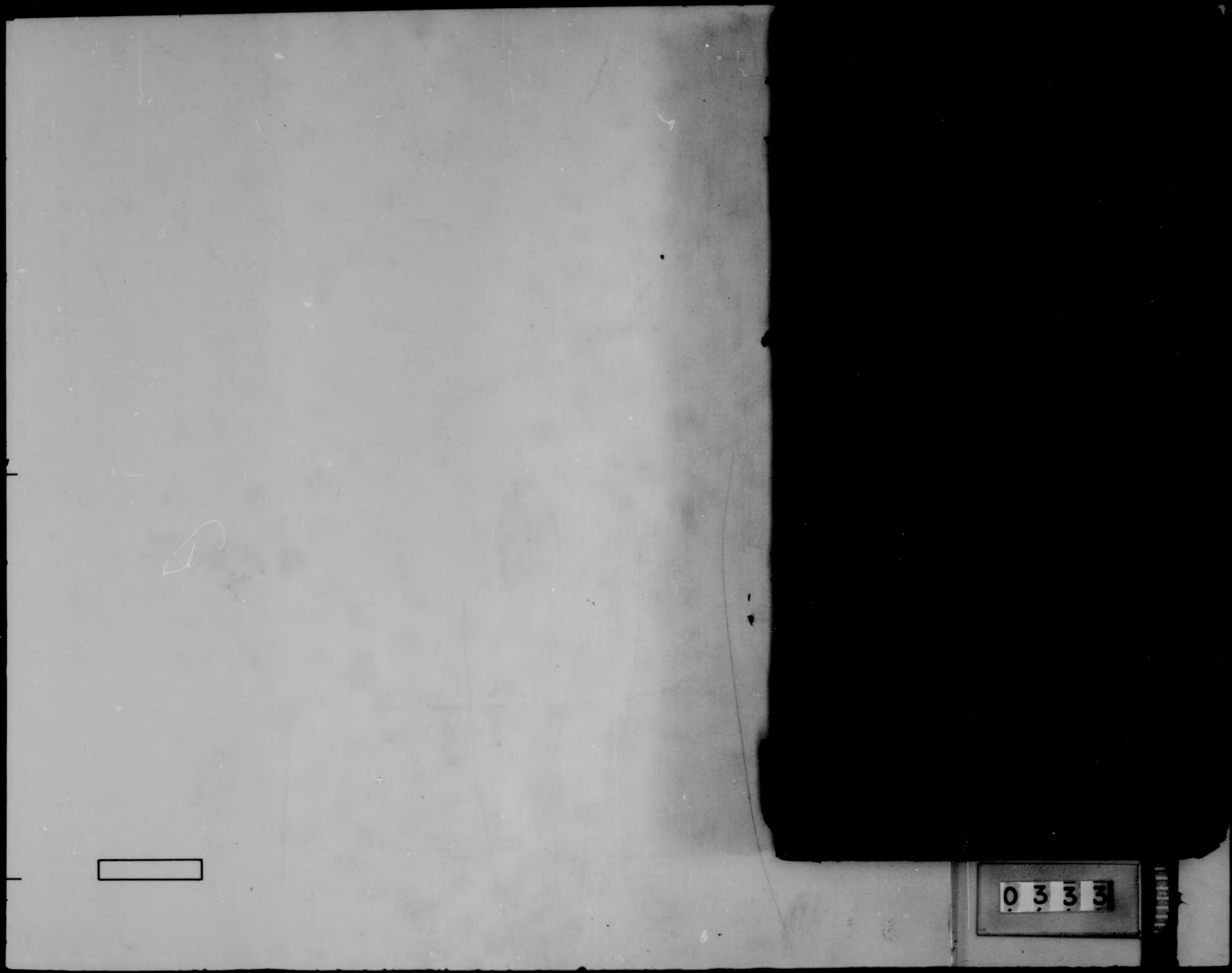
0333

50372

D. F. Balch
H. del Valle
- Inspectors. -

Sept 13 to Sept 30th 1905.

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0334

B.M. #39	Plug	30' L 673	8.613
40		50 R 686	7.038
41		95 R 704	7.403
42		77 L 721	8.310 Spike at base of fence post
43		100 R 741+60	8.131 " " " " " "
44		75 R 760+80	9.338 " " " " " "
45		75 R 788	9.155 " " " " " "
46		250 R 788	8.444 Plug NE Cor of building
47		160 R 809+50	5.832 Nail on Top of short fence post
48		100 R 838	6.007 " at base of fence post
49		75 R 855	14.481 " " " " plum tree

0335

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0337

Hole No. 1

Pugh Cont'r. 6" hole

1.

Report No. 1 9/3/04

9/13 05

Location 76' Lt E 679+75

Elev. of Ground. 4.9

Depth Below Ground	Character of Soil	Thickness	Elevation	Remarks.
4.	Water		0.9	
	Clay Yellow	18.	-13.1	Medium
18.				
	Sandstone	0.8	-13.3	Very hard cemented
18.8				
	Blue clay	1.8	-15.1	Hard
20.				

0338

Hole No 2

Pugh Cont'r 6" Hole

Location 79' Lt E 684+25 — 9/13 05 — Elev. of Ground 5.2

Depth Below Ground	Character of Soil	Thickness	Elevation	Remarks.
8.	Water		-2.8	
	yellow clay	17.	-11.8	medium
17				
	Sandstone	1	-12.8	Very hard was still in Sandstone when work stopp
18				

0339

Hole No. 3

5" Hole

9/30/05 Gerhart Contr

Location. 108' Lt E 684+50

Elev. of Ground. 4.9

Depth Below Ground	Character of Soil	Thickness	Elevation	Remarks.
8	Water		-3.1	
	Yellow Clay	12'	-7.1	Medium
12				
	Layers of Sandstone	4.0	-11.1	Sandstone in layers ½" to 1" thick every 3 or 4" Hard
16				
	Sandstone	1	-12.1	very hard
17				
	Yellow Clay Layers of Sandstone	0.5	-12.6	Sandstone in layers ½ to 1" thick Hard every 3 or 4"
17.5				
	Sandstone	0.5	-13.1	very hard
18				
	Clay Yellow Layers of Sandstone	3.0	-16.1	Sandstone in layers ½ to 1" thick - very hard
21.0				

	+	H I	−	Elev
BM #40	8.07	15.11	10.2	7.04

Hole No 2

4.91

0340

HOLE No. 4

9/21/05

5" Hole

4.

LOCATION 73' Lt E 690

ELEV. OF GROUND 5.4

Depth Below Ground	Character of Soil	Thickness	Elevation	Remarks.
8	Water		-2.6	
	Yellow Clay	10	-4.6	Medium
10				
	" "	5.5	10.1	Hard Decomposed
15.5				
	Sandstone	2.5	-12.6	very hard
18				
	Sandy Clay Layers of sandstone	1.	-13.6	Hard sandstone in layers 2 to 4" thick every 3 or 4"
19				
	Sandy Clay	2.	-15.6	Medium
21				
	Sandstone	0.5	-16.1	Very Hard
21.5				
	Sandy Clay	2.	-18.1	Medium
23.5				

BM # 40	9.90	1694		7.04
Hole No 4			11.5	5.4
TP 691+50	9.59	18.96	8.75	8.69

0341

HOLE No. 5

9/21, 05.

5.

LOCATION 120' Lt. E 694+90

ELEV. OF GROUND 6.8

Depth Below Ground	Character of Soil	Thickness	Elevation	Remarks.
8.5	Water		-1.7	
	Baked Sand	3.	3.8	very Hard could not be plowed with 4 horse plow
3				
	Yellow Clay	13	-9.2	Hard
16				
	Yellow Clay Layers of Sandstone	1.5	-10.7	very Hard sandstone in layers ½ to 1" thick clay 3 or 4"
17.5				
	Yellow Clay	1	-11.7	Hard
18.5				
	Sandy Clay	5	-16.7	Medium
23.5				
	Yellow Clay	2.5	-19.2	Hard
26.				

18.76

11.45 6.8 ground

TP 694+50 5.79 15.70 9.36 9.91

0342

Hole No. 6

9/12 05

Location 86' Lt E 700

Elev. of ground 5.2

Depth below ground	Character of Soil	Thickness	Elevation	Remarks
7.	Water		-1.7	
	Clay yellow	3.5	1.8	Medium
3.5				
	Yellow Clay	8.5	-6.7	Hard
12				
	Sandy Clay	1.	-7.7	Medium
13				
	Sand	1.	-8.7	Soft
14				
	Yellow Clay	1	-9.7	Hard
15				
	Layers of Sandstone	3	-12.7	Sandstone in layers ½ to 1" thick 1" every 3 or 4" Material getting softer
18				
	Yellow Clay	4	-16.7	Medium
22				
	Sand	4	-18.7	Soft
26				

Check 700		15.90		
			7.4	8.3
Hole 86 E			10.35	5.35
TF 700 + 20	10.6	13.40	7.9	7.80

0343

Hole No. 7

9/22/45

7.

Location 6 & Lt E 705

Elev. of Ground 4.7

Depth below ground	Character of Soil	Thickness	Elevation	Remarks
6	water		-1.3	
	Clay yellow	10.5	-5.8	medium
10.5				
	Sand	0.5	-6.3	soft
11.				
	Clay yellow	11.5	-17.8	Medium
B.R.S.				

Check on B.M. No. 41		18.40	11.0	7.40
Hole No. 7			13.65	4.75
TP 707+50	10.56	18.46	10.5	7.90

0344

Hole No 8

9/22.05.
43

8.

Location 120' Lt E 710

Elev. of Ground 5.5

Depth below ground	Character of Soil	Thickness	Elevation	Remarks
6.5	Water		-1.	
6	Sandy Clay	6	-0.5	Medium
8	Clay yellow	2	-2.5	Very Hard Decomposed Rock formation
15	Clay yellow	7	-9.5	Medium
22	Sand	7	-16.5	Soft
23.5	Clay yellow	1.5	-18.	Medium

		18.46			
Hole No 8			13.0	5.46	
TP 714+50	10.06	18.62	9.9	8.56	

0345

Hole No. 9

Report No. 1 9/2304

9/43.05

Location 90 Lt E 715

Elev. of Ground 8.2

Depth below Ground	Character of Soil	Thickness	Elevation	Remarks
10	Water		-1.8	
4	Rich alluvial Soil	4	4.2	medium
16.5	Clay yellow	12.5	-8.3	"
18	Sand	1.5	-9.8	Soft
21	Clay yellow	3.	-12.8	Medium
22.5	Fine Gravel	2.5	-15.3	Soft
27	Clay yellow	3.5	-18.8	Medium

		18.62		
Hole No 9			10.4	8.22
T.P. 7170.50		12.52	10.08	8.54

0346

Report No. 2 2/30 05 Hole No. 10 Date 2/25, 05. 10.

Location 63' Lt. 720. Elev. of Ground 8.0

Depth below Ground	Character of Soil	Thickness	Elevation	Remarks
10	Water		-2.	
	Rich Alluvial Soil	8.5	5.5	Medium
8.5				
	Yellow Clay	15.5	-10.	
18.				
	Sandy Clay	1.	-11.	Soft
19				
	Sand	4	-15.	"
23				
	Yellow Clay	1	-16.	Medium
24	Stiff in clay			

BM #42	4.03	12.34		8.31
Check 720			4.35	7.99
TP 720+50	3.43	11.78	3.99	8.35.
Hole #10			4.34	8.00

0347

Hole No. 11 Date 9/25/05 11.

Location 100' Lt E 725 Elev. of Ground 7.8

Depth below Ground	Character of Soil	Thickness	Elevation	Remarks
11	Water		-3.2	
	Rich Alluvial Soil	3.	4.8	Medium
3				
	Yellow Clay	12.5	-7.7	"
15.5				
	Yellow Clay	5.5	-13.2	Hard Layers of Sandstone
21				
	Sand	1.5	-15.7	Soft
22.5				
	Yellow Clay	2.5	-18.2	Medium Layers of Sandstone
25				

	+		-	Elev
Hole No. 12	3.70	11.78	3.0	7.78
Hole No. 11			4.03	7.75
		11.48		

0348

Hole No. 12

Date 9/26. 05.

Location 80' Lt. E 730

Elev. of Ground 8.5

Depth below Ground	Character of Soil	Thickness	Elevation	Remarks
9.	Water		-0.5	
	Rich Alluvial Soil	2.5	6.	medium
2.5				
	Sandy Clay Bolted	2.5	-3.5	hard
5				
		11.	-7.5	very hard
16				
	Yellow Clay	10.5	-18.	medium
26.5				

TP 733	4.40	12.48	4.74	7.74
Hole No 12			4.00	8.48

0349

Hole No. 13 Date 9/26 05. 13.

Location 60' Lt E 735 Elev. of Ground 8.1

Depth below Ground	Character of Soil	Thickness	Elevation	Remarks
8.5	water		-0.4	
	Rich Alluvial Soil	2.5	5.6	medium
3.5				
	Yellow Clay	4.5	1.1	"
7.				
	Sandy Clay	3.	-0.9	Soft
9.				
	Yellow Clay	7.	-7.9	medium
16				
	" "	1	-8.9	Soft
17				
	Sand	3	-11.9	"
20				
	Yellow Clay	6.5	-18.4	medium
26.5				

		14.14		
Hole No 13			4.04	8.1
To E 727 485	4.26	14.12	4.28	7.86

0350

Windy

Hole No. 14

Date 9/17, 05.

14.

Location 120' Lt E 740

Elev. of Ground 8.0

Depth below Ground	Character of Soil	Thickness	Elevation	Remarks
8.5	water		-0.5	
	Rich Alluvial Soil	8.5	5.5	medium
8.5				
	Yellow Clay	3.0	8.5	"
5.5				
	Sand	5.0	-8.5	Soft
10.5				
	Yellow Clay	10.5	-13.0	medium
21				
	Sand	3.0	-16.0	Soft
24				
	Yellow Clay	2.0	-18.0	medium
26				

Top of rock at tunnel floor		12.12	0.66	Elev 11.46
Hole No. 14			4.07	8.05

0351

Hole No. 15

Date 9/27 05

15.

Location 93' Lt E 745'

Elev. of Ground 6.0

Depth below Ground	Character of Soil	Thickness	Elevation	Remarks
7.8	Water		-1.8	
	Rich Alluvial Soil	2.	4.0	medium
2				
	Sandy Clay Baked	7.	-3.0	very Hard
9				
	" "	1.	-4.0	Medium
10				
	Sand	10.	-14.	Soft
20				
	Yellow Clay	4	-18	Medium
24				

	+	HI		Elev
BM #43	9.23	17.36		8.13
Hole No 15			11.35	6.01
TP 745	11.34	11.37	10.39	6.97

0352

Hole No. 16 Date 9/28/05. 16

Location 60' Lt E 75a Elev. of Ground 7.9

Depth below Ground	Character of Soil	Thickness	Elevation	Remarks
8.5	Water		-0.6	
	Rich Alluvial Soil	3	2.9	Medium
3.				
	Baked Sand	2	3.9	Hard
4				
	Yellow Clay	4	-0.1	Very Hard
8				
	Fine Sand	1	-1.1	Soft
9				
	Sand	5	-6.1	"
14				
	Yellow Clay			Hard
	Still in Clay when work on Hole stopped on account of Sand caving in			

TP 161	8.90	1131	4.44	8.65	
Hole No 16			8.4	7.9	
		1155			

0353

Hole No. 17 Date 9/18 05

Location 120' Lt E 755 Elev. of Ground 7.2

Depth below Ground	Character of Soil	Thickness	Elevation	Remarks
8.	Water		-0.8	
	Rich Alluvial Soil	1.5	5.7	Medium
1.5				
	Yellow Clay	6.5	-0.8	Very Hard
8				
	Yellow Clay	3.5	-4.3	Hard
11.5				
	Yellow Clay	4.5	-8.8	Very Hard
16				
	Yellow Clay	5.	-13.8	Medium
21				
	Sand	3.	-16.8	Soft
24				
	Still in Sand			50' Lt of E 755 in bottom of borrow pit made for building levee ground could not be plowed with a horse team
				Elev of bottom of borrow pit is 5.5
	11.55			
Hole No 17		9.8		

0354

Hole No. 18 Date. 9/29/05 18.

Location 90' Lt & E 760 Elev. of Ground 3.8

Depth below Ground	Character of Ground	Thickness	Elevation	Remarks
				Hole No 18 in borrow pit of large
5	Water		-1.2	Outer edge of borrow pit 110 Lt & E 760
				Surface of original ground is 7.3
	Yellow Clay	5	-1.2	Very Hard
5				
	Yellow Clay	5	-6.2	Medium
10				
	Yellow Clay	6	-12.2	Hard
16				
	Yellow Clay	6	-18.2	Layers of Shale 2 to 3 in Very Hard thick Rotary Bor 3 in
22				
	original Ground			
	Rich Alluvial Soil	1.5	5.8	Medium
1.5				
	Baked Sand	2	3.8	Hard
3.5				

Bm #44	700	16.34	9.34	
Hole No 18		12.5	3.8	
Original surface		9.00	7.3	

0355

Hole No. 19 Date 9/29 05

19.

Report No. 2 9/29 05 D.F. Balch

Location 70' Lt I 765 Elev of Ground 3.5

Depth below Ground	Character of Soil	Thickness	Elevation	Remarks
				Hole No 19 in borrow pit of Elev
4.5	Water		-1.	Outer edge of borrow pit 100' Lt 765
				Surface of original ground is 6.8
	Yellow Clay	9	-5.5	Very Hard
9				
	Yellow Clay	8	-13.5	Medium
17				
	"	0.5	-14	Very Hard
17.5				
		5.5	-19.5	Medium
23				
	Original Ground			
	Black Alluvial Soil	1.3	5.5	Hard
1.3				
	Baked Sand	2.0	-3.5	Very Hard
3.3				
				Hole turned over to C.G. Mayer

Bm #44	7.65	16.99		9.34
Hole No 19			13.45	3.54
Original Ground			10.15	6.84
TP	6.60	13.04	10.55	6.44

0356

Hole No 20 — Date 9/30 05 — 20.

Week ending Sept 30 1905 — Report No 20

Location 120' Lt "E" 70+00 — Elev of Ground 5.6

Depth below Ground	Character of Soil	Thickness	Elevation	Remarks
9.0	Water		-3.4	
1/4 surface	Earth	2.0		Dark rich soil
2.0	Clayey earth	6.0	3.6	Packed rather hard.
8	Sandy clay	7.0	-2.4	Soft
15	Blue clay	1.0	-9.4	Soft and very stiff
16	White clay	2.0	-10.4	Mixed with coarse sand
18	Sandy clay	3.0	-12.4	Mixed with small pebbles
21	Sandy clay	5.0	-15.4	From 21.0 below to 26.0 below still a sandy clay with fewer pebbles and getting harder as depth increases.
26			-20.4	

C.G. Wayler, Asst Engr

0357

Hole No. 21 — Date 9/30 05. — 21.

Week Ending Sept 30, 1905. Report No 29

Location 647.4 N E 77.5 +00 — Elev. of Ground 6.80

Depth below Ground	Character of Soil	Thickness	Elevation	Remarks
10'	Water		-3?	
4ft Surface	Earth	2'	6.8	Dark rich soil.
2	Sand and earth.	3'	4.8	Packed rather hard.
5	Sedimentar ✓	12'	1.8	Fine grained and packed fairly hard.
17	Sand	4'	-10.2	Pure
21	Sandy Clay	5'	-14.2	Soft, but getting harder as depth increases.
26			-19.2	

F.G. Moser, Asst Engr

0358

Hole No. 22

Date 10/4 05.

22.

Location 9 Lt "E" 780 100

Elev of Ground 7.50

Depth below Ground	Character of Soil	Thickness	Elevation	Remarks
9°	Water		− 1.5	
Surface	Earth	3		Dark rich soil
3	Clay	2	+ 4.5	Sandy Clay
5.	Clay	2.0	+ 2.5	Light Clay
7.5	Hard Pan	2	0.0	Damp Hard Pan.
	Clay	2.5		Wet
10.	Clay	2.9	− 2.5	Getting harder. bit of hard pan.
12.9	Clay and Sediment	5.1	− 5.4	
18.	Adobe	5.	− 10.5	Packed Hard
23.	Sand and Clay	3.	− 15.5	Packed Med. Hard. running to sand at 26.
26			− 18.5	

0359

Hole No. 23.

Date 10/2 .05

Location 115 Sta. E. 785+00.

Elev of Ground 8.10

Depth below Ground	Character of Soil	Thickness	Elevation	Remarks
9.5	Water		-1.4	Began at 11^00 AM. 10/2 05
At Surface			+ 8.1	
"	Earth	2.		Sandy soil dark
2.	soil	×	6.1	yellow.
"	"	7.5		Light soft.
9.5	"	×	-1.4	
	Clay	9.0		
18.5	×	×	-10.4	
	Sand	1.5	-	Coarse
20.0	×	×	-11.9	
	Blue Clay	5.0		Stiff
25		×	-16.9	
	Sandy Clay			Finished at 10^15 AM. 10/2-05

0360

Hole No. 24 — Date 10/3 05. — 24.

Location 66' Left Sta E 790 — Elev. of Ground 5.90

Depth below Ground	Character of Soil	Thickness	Elevation	Remarks
Surface	Earth		+5.9	Sedimentary or Glacial Lacustrine.
2' ft	to Yellow Sand & Clay	7'	+2.9	began Work at 10 25 AM. 10/3 05
	" " "	5.5	+0.4	Soft.
7.5	Water		-1.6	
	Yellow Clay a little Sandy	7.5		Stiff Yellow Clay with Sand
15.0			-9.1	
	Coarse Sand	1.0		Coarse Sand (very little Clay)
16.0			-10.1	
	aluminum Clay	3.5		Yellow Aluminum Clay - Stiff)
19.5			-13.6	
	Stiff Blue Clay	6 2		Medium.
25 5			-19.6	
	Yellow Clay			
				Finished Hole 2:15 P.M.

0361

Hole No. 25 — Date 10/3 05 — 25.

Location 90 ft Left E 795 — Elev. of Ground 5.20

Depth below Ground Surface	Character of Soil	Thickness	Elevation	Remarks
				Began work at 3:00 P.M.
Surface	Earth		+5.2	
3.5	Soil	3.5	+1.7	Dark soil
5.0	Hard pan	1.5	+0.2	Sandy Loam.
7.3	To Water		-2.1	Elev of Surface of water.
9.0	Hard Yellow Clay	4.0	-3.8	Hard Pan
10.5	Soft Yellow Clay	1.5	-5.3	Hard Yellow Clay
20.0	Sand & Clay	9.5	-14.8	Soft.
23.5	Sand & Clay	3.5	-18.3	Medium
25.0	Yellow Clay	1.5	-19.8	Mostly Sand & Soft.
26.0		1.0	-20.8	Packed.
				Finished Hole at 9 a.m. 10/4/05. C.J.H.

0362

Hole No. 26 Date. 10/4/05 26.

Location 110ft Left E 800. Elev of Ground 4.30

Depth below Ground Surface.	Character of Soil	Thickness	Elevation	Remarks
	Earth	3	+4.3	Commenced Hole at 9:20 a.m. Dark.
3°	Sandy Clay	1.5	+1.3	Medium.
4.5	Sand & Clay	1	-0.2	Gets lighter deeper down. Stiff.
5.5	Hardpan	1	-1.2	Dry.
6.5	Water		-2.2	
6.5	Hardpan	2	-2.2	Wet.
8.5	Sedementary Clay	0.5	-4.2	Stiff.
9°	Sand & Clay	10.0	-4.7	
19°	Sand	4	-14.7	Coarse.
23°	Yellow Clay	2.0	-18.7	Stiff.
25°	Still same.		-20.7	Finished Hole 12 m. 10/9/05. L.J.H.

0363

Hole No. 27 — Date 1/4/05.

Location 90 ft. Left E 805 — Elev. Surface of Ground 5.30

Depth below Ground at Surface	Character of Soil	Thickness	Elevation	Remarks.
	Earth	3.0	+ 5.3	Commenced Hole at 1 p.m.
3.0	Sandy Loam	1.0	+ 2.3	Alkali - Dark.
4.0	Hardpan	2.3	+ 1.3	Medium.
6.3	Water		- 1.0	Very Hard. Dry.
6.3	Hardpan	3.2	- 1.2	
9.5	Sandy Clay	3.0	- 4.2	Wet.
12.5	Sand & Clay	1.5	- 7.2	Medium.
14.0	Sand	2.0	- 8.7	Soft.
16.0	Sand & Clay	3.5	- 10.7	Soft.
19.5	Clay	6.5	- 14.2	Packed.
26.0			- 20.7	Packed Hard. Mixed with Sand.
				Finished at 4:15 p.m.
				L.J.H.

0364

Hole No 28 –

Location 60 ft Left E 810 –

Date 1/5 1905

Elev. Surface of Ground – 3.80

Depth Below Ground	Character	Thickness	Elevation	Remarks
At Surface	Black Dirt Some Alkali		+ 3.8	began work 7 oo am 1/5 - 05
		1.0		Black Dirt
1.0	Adobe with Alkali		+ 2.8	
		1.5		Stiff Material
2.5	Sandy Clay yellow		+ 1.3	
4.8	Water		– 1.0	
		6.7		Soft Material
8.7	Coarse Sand & Clay		– 4.9	
		1.1		Soft
9.8	Coarse Sand		– 6.0	
		3.7		Soft
13.5	Coarse Sand a little Clay		– 9.7	
		6.5		"
20.0	Coarse Sand –		– 16.2	

Could not make any more progress on account of sand filling in hole. grout work at 10 oo am 1/5 - 05

Estimated by ME Hermann Gerhardt who has Dug many wells through this section of the country that this material extends to a depth of from 50 to 80 ft below the surface –

0365

Hole No 29 -

75 ft Left E 815

Date 10/5 - 1905

Elev. Surface of Ground = 2.50

Depth below Surface	Character of Soil	Thickness	Elevation	Remarks
Surface	Black Dirt	1.6	+ 2.5	Boring Work at 10:20 am. 10/5 - 05
1.6	Stiff Alkali Yellow Clay		- 0.9	Black Tulee Soil
3.8	Water	3.7	- 1.3	Stiff Clay.
5.3	Sandy Yellow Clay	1.5	- 2.8	Sandy Yellow Clay - Soft -
6.8	Fine Dark Sand	1.4	- 4.3	Fine Dark Sand - Soft -
8.2	Fine Sand & a little Blue Clay	1.3	- 5.7	Sand & Clay - Soft -
9.5	Fine Dark Sand	6.5	- 7.0	
16.0	Sand a little coarser when work stopped. Coarse Sand -		- 13.5	quit work on account of Sand caving in the Hole at 11:45 am 10/5 - 05

0366

Hole Nº 30

100 ft Left E 820

Elev. Surface Ground = 2.70

Sta 820 in Tulee Swamp.

Same material as
in Hole Nº 31

0367

Hole No 31

Date 10/5 1905

124' Left Sta E 825

Elev- of Surface Ground = 3.60

Depth below Surface	Character of Soil	Thickness	Elevation	REMARKS.
Surface.	Black Soil and Some Alkali	1.5	+ 3.6	Began Hole at 1:20 P.M. 10/5-05
1.5	adobe with Alkali..	2.0	+ 1.1	Stiff
3.5	Blue Clay & Sand		- 0.9	Soft
4.0	Water	8.5	- 1.4	Soft
12.0	" " " "		- 9.4	
	Still in Soft Blue Clay and Sand when Work Stopped			Continued work at 9:30 AM 10/6 05 with casing Tubes. Stopped Work at 10:20 AM 10/6 05
93'	Same material	11.0	- 20.4	
	Soft Blue Clay, Sand & mud Commonly Called "Muck" or Quick Sand			

- Note - Casing Tubes and sand Pumps have been used on all Holes South from Hole No 31 - and that this material is estimated by good authority (Mr Hermann Gerhardt) to extend to a depth of from 50 to 80 ft below the Surface.

Stopped Work at 2:20 P.M. on account could not raise the material with auger - all soft Clay & Sand (will require casing Tubes.)

0368

Hole No 37

Date 1/5 - 1905

90 ft Left Sta E 830

Elev - Surface Ground = 4.70

Depth Below Surface	Character of Soil	Thickness	Elevation	Remarks.
				began work at 2nd P.M. 1/5-05
Surface	Black - Soil		+ 4.7	
		1.0		Dry Black Soil Hard
1.0	Dry Adobe		+ 3.7	
		2.2		adobe - quite Hard or Compact
3.2	Sedimentary Soil		+ 1.5	
				Sedimentary - containing Rotten Sand - Dirt with just a little clay - Stiff Material
5.6	Water		- 0.9	
		3.7 (2.0)		
5.9	Sand & clay		- 1.2	
		1.6 (2.3)		Soft Sand + clay
7.5	" " "		- 2.8	

in Soft Sand + Clay when were Stopped
Quick Sand

Stopped work at 2nd P.M.
on account material slipped through Auger Tube - could not raise to surface.
Will require Casing Tubes.

0369

Hole No 33

Date 10/5 - 1905

65ft Left Sta E 835

Elev Surface Ground = 6.50

Depth below Surface	Character of Soil	Thickness	Elevation	Remarks
				began hole at 3:30 PM. 10/5 - 05
Surface	Sedimentary Soil	1.0	+ 6.5	Very fine Sand Clay + Light Vegetable matter - Light colored.
1.0	Alluvial Soil - Compact	4.0	+ 5.5	Light Colored Alluvial Soil
5.0	Fine Sand + Light Clay - Soft	(1.2) 2.6	+ 1.5	Soft Fine Sand + Clay
7.5	Water		- 1.0	
7.6	Sand + Clay - Soft	(1.4) 2.8	- 1.1	(Sand + Clay Soft - when once stopped)
9.0	Quick Sand - Soft	13.0	- 2.5	Resumed work at 10:30 AM. 10/6 - 05
22.0	" " "		- 15.5	Sand caved in Hole could not raise material with auger. 5:30 PM 10/5 - 05
	Quick Sand - Soft			
	Stopped work at 1:40 PM. 9/6 - 05			

0370

Hole No 34

Date 10/6 – 1905

90ft Left Sta E840.

Elev – Surface Ground = 7.50

Depth Below Surface	Character of Soil	Thickness	Elevation	REMARKS.
				Started Hole at 1.55 PM. 10/6 – 05
Surface	Black Soil –		+ 7.5	
		1.7		Earth – Black Soil –
1.7	Light Colored Soil		+ 6.3	
		2.3		Light Soil – Some Alkali – Stiff –
3.5	Light Brown Soil – Some Sand		+ 4.0	
		0.8		Sand & Earth – Light Soil – Medium –
4.3	Light Brown Sand – Soft.		+ 3.2	
8.7	Water		– 1.2	
		8.4		Fine Brown Sand – Very Little Earth – Soft
17.7	Quick Sand		– 5.2	
		9.3		Quick Sand – Very Soft – Dark
27.0	" "		– 14.5	
	Still in Soft Quick Sand when work Stopped			Quit Work at 3.20 PM. 10/6 – 05

– Note – Mr Hermann Gerhardt who is boaring these Holes – And who has dug many Wells through this section of the country – Says that this material extends for a depth of from 50 to 80 ft below the Surface

0371

Hole No 35

Date 10/6-1905

120 ft Left Sta E 84+5

Elev Surface of Ground = 9.50

Depth Below Surface	Character of Soil	Thickness.	Elevation	REMARKS.
				Started Hole at 4 P.M. 10/6-05
Surface	Black Soil or Dirt.		+ 9.5	
		5.0		Black Dirt
5.0	Light Brown Sand.		+ 4.5	
10.3	Water		- 0.8	
		5.5		Brown Sand - Soft.
10.5	Brown Sand -		- 1.0	
		2.5		Soft
18.0	Quick Sand		- 3.5	
		10.0		Very Soft.
23.0	Still Quick Sand when stopped.		- 13.5	
				Hole Completed at 8.05 A.M. 10/7/05

0372

Hole No 36

Date 10/7/05

90 ft. Left Sta E 850

Elev. Surface of Ground = 11.80

Depth Below Surface	Character of Soil.	Thickness	Elevation	REMARKS.
At Surface	Rich Dark Earth		+ 11.8	Started hole at 8:40 A.M.
		3.0		Soft
3.0	Sandy Sediment		+ 8.8	
		2.0		Soft
5.0	Sedimentary Clay		+ 6.8	
		1.8		Medium
6.8	Fine Dark Sand		+ 5.0	
		2.3		Soft
9.1	Sedimentary Clay		+ 2.7	
		2.9		Soft Blue
12.0	Water		- 0.2	
12.0	Sedimentary Clay		- 0.2	
		4.2		Packed Blue
16.2	Blue Sand & Clay		- 4.4	
		1.8		Medium Mostly Sand
18.0	Blue Sand.		- 6.2	
		3.2		Very Soft
21.2	Blue Sand		- 9.4	
				Finished Hole at 10:10 A.M.

0373

(Cont'd) Gerhardt's Dump for Oil Boring Sta "F" 6+79 to F 8+50.

Gerhardt's Dump

Sept 30	1 day	= 1 day	= 1 day
Oct 1	4/9 days		
3	1 "		
4	1 "		
5	" "		
6	" "		
7	4/9 "		
	5 " October	= 5	
Sept (Balance)		8 4/9	
		14 4/9 @ $12.00	
		= $174.67	

131
12
262
131
9) 1572 ($174.67
9
67
63
47
36
60
54
60

Sacramento Southern R.R.
Statement of time of Test Borers
Test Boring for Character of Soil for Dredger Work

C L Pugh - 8 hrs Work = 1 Day

A H Gerhardt - 9 hrs = 1 day

Date	Name of Contractor	No. of Hole	Feet Bored	Hours Worked	Rate per day	Amount
Sept 13	C.L. Pugh	1	20.0			
" "	" " "	2	18.0	8	12.00	12.00
	Totals	2	38.0	8	12.00	12.00
Sept 20	A H Gerhardt	3	21.0	5	10.00	556
" 21	" " "	4	23.5			
" 21	" " "	5	26.0	9	10.00	1000
" 22	" " "	6	24.0			
" 22	" " "	7	22.5	9	10.00	1000
" 23	" " "	8	23.5			
" 23	" " "	9	27.0	9	10.00	1000
" 25	" " "	10	24.0			
" 25	" " "	11	26.0	9	10.00	1000
" 26	" " "	12	26.5			
" 26	" " "	13	26.5	9	10.00	1000
" 27	" " "	14	26.0			
" 27	" " "	15	24.0	9	10.00	1000
" 28	" " "	16	14.0			
" 28	" " "	17	24.0	9	10.00	1000
" 29	" " "	18	22.0			
" 29	" " "	19	23.0	9	10.00	1000
" 30	" " "	20	26.0			
" 30	" " "	21	26.0	9	10.00	1000
	Totals for September 19		455.5	86	10.00	95.56

A. H. Gerhardt paid by Voucher No. 35018 for September 1905 Amounting to $95.56

Oct Report Page 39

0375

Date		Name of Contractor	No. of Hole	Feet Bored	Hours Worked	Rate per day	Amount
Oct	2	F H Gerhardt	22	26.0			
"	2		23	25.0	9	10.00	10.00
"	3		24	25.5			
"	3		25	26	9	10.00	10.00
"	4		26	25			
"	4		27	26	9	10.00	10.00
"	5		28	20			
"	5		29	16			
"	5		30	Tule Swamp			
"	5		31	23.			
"	5		32	7.5			
"	5		33	22.	9	10.00	10.00
"	6		34	22.			
"	6		35	23	9	10.00	10.00
"	7		36	21.2	9	10.00	10.00
"	Totals for Oct F H G		15	208.2	54	10.00	60.00
	" " Sept " "		19	455.5	86	10.00	95.56
	" " " C L P		2	38.	8	12	12
Grand Totals			36	201.7	148.		167.56
Average depth of holes				22.27 ft			
" cost per foot				.209			

F H Gerhardt Bill for 36 holes 3510 ft
for October 1905 Amount $167.56

0376

Sacramento Southern Railroad
Snodgrass Slough - Test Borings.

Test Hole Boring at Station "T" 1108+14.0

-4.6 Elev. of ground at "T" 1108+14.0

H. Gerhardt, Well Borer, B. Fitch, Helper.

Note: All elevations referred to Sacramento Southern R.R. Datum.

Date 1910

April 7th Hauling well boring rig from Ralph Moore's Ldg to Launch Ldg on G.W. Lockes Ranch.

" 8th Building platform for boring rig at "T" 1108+14.0

" 9th Started boring at "T" 1108+14.0 at 10:30 A.M

April 9th	Sample Number	Character of Material	Work of Boring	Elev. of Water Surface	Elev. of Top of Stratum	Elev. of Bottom of Stratum	Depth of Material	Depth of Hole this Day	No. of Joints of Well Casing Used.
				10:30 a.m. 3.2			Water 8 ft deep		
		12 ft Tule Roots and Mud	Easy	11:00 am. 3.1	-4.6	-16.6	12 ft.		
	1	5 ft Clay	Medium		-16.6	-21.6	5 "		
		3 ft Sandy Clay	Easy	3:30 p.m. 3.4	-21.6	-24.6	3 "		
		4.5 ft. Clay	Medium		-24.6	-29.1	4.5 "		
	2	4.5 ft. Sand with a small amount of mixed clay.	"	4:30 p.m. 3.2	-29.1	-33.6		29 ft	20
April 11th		10.3 ft. Sand with a small amount of mixed clay	Medium	8:30 a.m. 3.9					
				11:30 a.m. 3.8	-33.6	-43.9	14.3 ft		
		6.1 ft. Sand	"	2:30 p.m. 3.7	-43.9	-50.0	6.1 "	16.4	7
		Finished boring at 2:30 p.m.		4:30 p.m 3.6					
		From 2:30 p.m. to 5:00 p.m. building platform at "T" 1109+05.0 and rivetting rings to first joint of casing							
April 12th	3	5.3 ft. stiff Clay	Hard	8:30 a.m. 4.0	-50.0	-55.3	Not Penetrated	5.3	1
				11:30 a.m. 3.9					
				3:00 p.m. 3.7					

0377

Sacramento Southern Railroad
Snodgrass Slough - Test Borings.

Test Hole Boring at Station "T" 1109+05.5

3.5 Elev. of ground at "T" 1109+05.5

H. Gerhardt, Well Borer. B. Fitch, Helper.

Date: 1910

Note: All elevations referred to Sacramento Southern Railroad Datum.

April 12th Moved well boring rig from "T" 1108+14.0 and set it up at "T" 1109+05.5 from 1:00 p.m. to 3:30 p.m.

" 12 Started boring at "T" 1109+05.5 at 3:30 p.m.

	Sample Number	Character of Material	Work of Boring.	Elev. of Water Surface.	Elev of Top of Stratum	Elev. of Bottom of Stratum.	Depth of Material	Depth of Hole this day	No. of Joints of Well Casing Used.
April 12th				3:00 p.m. 3.7					
		12 ft Tule Roots and Mud	Easy		3.5	-8.5		12 ft	6
April 13th		22 ft Tule Roots and Mud	"	8:30 a.m. 3.8	-8.5	-30.5	34 ft		
	4	13 1/2 ft Clay	"	1:00 p.m. 3.8	-30.5	-43.6	13 1/2 "		
	5	2 5/8 ft Sand & Gravel	"	2:30 p.m. 3.7	-43.6	-46.1	2 5/8 "		
		1 ft Stiff Clay	Hard	4:30 p.m. 3.6	-46.1	-47.1		38 5/8 ft	21
April 14th	6	6 ft Stiff Clay	Hard	8:30 a.m. 3.7	-47.1	-53.1	7 "		
	7	5 5/8 ft Clay	Medium	11:30 a.m. 3.7	-53.1	-58.6		11 5/8 ft	
				3:30 p.m 3.7					
		Finished boring at 3:45 p.m							
April 15th	8	18 6/8 ft. Clay	Medium	9:00 am 3.5	-58.6	-77.2	24 1/2 "		
		1 5/8 ft. Sand mixed with Clay		11:00 a.m. 3.9	-77.2	-78.7	Not penetrated	20 1/2 ft	
				3:00 p.m. 3.5					

Finished boring at 3:30 p.m.

From 3:30 p.m. to 5:00 p.m. moving boring rig to "T" 1109+96.2

0378

Sacramento Southern Railroad.
Snodgrass Slough - Test Borings.

Test Hole Boring at Station "T" 1109+96^{2} 2^{7} Elev. of ground at "T" 1109+96^{2}

H. Gerhardt, Well Borer. B. Fitch, Helper.

Date: 1910 Note: All elevations referred to Sacramento Southern R.R. Datum.

April 16th Moved well boring rig from "T" 1109+05^{2} to "T" 1109+96^{2} Started boring at 9:00 a.m.

	Sample Number	Character of Material	Work of Boring	Elev. of Water Surface	Elev. of Top of Stratum	Elev. of Bottom of Stratum	Depth of Material	Depth of Hole this day	No. of Joints of Well Casing Used
April 16th		22 ft. Tule Roots and Mud	Easy	8:30 a.m. 3^{2}	2^{7}	-19^{3}	22 ft.	22 ft.	11
April 18th		9 ft. Clay	"	8:30 a.m. 3^{2}	-19^{3}	-28^{3}	9 "		
	9	2 ft. Stiff Clay	Hard	2:00 p.m. 3^{2}	-28^{3}	-30^{3}	2 "		
	10	5^{2} ft. Clay	Easy	3:30 p.m. 3^{2}	-30^{3}	-35^{5}	5^{2} "		2
		2 ft. Sand	"		-35^{5}	-37^{5}		18^{2} ft.	
April 19th	No boring done this day, H. Gerhardt went to Sacto last night & return this p.m. am (small boat)								
April 20th		9 ft. Sand and Mud	Easy	8:30 a.m. 3^{2}	-37^{5}	-46^{5}	11 ft		
	11	9^{8} ft. Stiff Clay	Hard	11:30 a.m. 3^{3}	-46^{5}	-56^{3}	9^{8}		13
		1^{5} ft Clay	Medium	2:00 p.m. 3^{3}	-56^{3}	-57^{8}		20^{3}	
	Finished boring at 4:30 p.m.			4:30 p.m. 3^{2}					
April 21st	12	10^{1} ft. Clay	Medium	8:00 a.m. 3^{2}	-57^{8}	-67^{9}	Not penetrated		
	Finished boring at 10:30 a.m.								

0379

Sacramento Southern Railroad.
Snodgrass Slough - Test Hole Borings.

Test Hole Boring 20 ft. Right of "T" 1109+05° Elev. of Ground 20 ft. Right of "T" 1109+05°

H. Gerhardt, Well Borer. B. Fitch, Helper.

Date. 1910 Note: All elevations referred to Sacramento Southern R.R. Datum.

April 21st Building platform and moving well boring rig from "T" 1109+96° to 20 ft. right of "T" 1109+05° from 10:30 am to 12:00 m
1:00 to 2:00 pm. rivetting well casing. Started boring at 2:00 p.m.

	Sample Number	Character of Material	Work of Boring	Elev. of Water Surface.	Elev. of Top of Stratum.	Elev. of Bottom of Stratum.	Depth of Material	Depth of Hole this day	No. of Joints of Well Casing used. Galvanized
April 21st		28 2/12 ft. Tule Roots and Mud	Easy	1:00 p.m. 3 3/12	3°	-25 9/12		28 9/12 ft	17
				4:30 p.m. 3 3/12					
April 22nd		4 ft. Tule Roots and Mud	Easy	8:30 a.m. 3 4/12	-25 2/12	-29 9/12	32 9/12 ft		10
	13	10 6/12 ft. Clay	"	11:30 p.m. 3 3/12	-29 9/12	-40 5/12	10 6/12 "		
		3 5/12 ft Clay and Sand	"	2:30 p.m. 3 3/12	-40 5/12	-44 0/12	3 5/12 "		
	14	2 ft Sand and Gravel	"	4:30 p.m. 3 3/12	-44 0/12	-46 0/12	2 0/12 "		
	15	16 6/12 ft. Clay	Medium		-46 0/12	-62 6/12	16 6/12 "		
	16	5 ft. Stiff Clay	Hard		-62 6/12	-67 6/12	5 0/12 " Not penetrated	41 7/12 ft.	
April 23rd		11 3/12 ft. Clay	Medium	8:30 a.m. 3 5/12	-67 3/12	-79 4/12			
				11:00 a.m. 3 5/12					

0380

Sacramento Southern Railroad
Snodgrass Slough - Test Hole Borings

Test [illegible] [illegible] 3°

H. Ger[illegible] [illegible] reter.

Date. [illegible] from "T" 1109+

April [illegible] ted boring a[illegible] Strat

April 2 [illegible] 3

April [illegible] -25

[illegible] -29

[illegible] -40

[illegible] -44

[illegible] -4[illegible]

[illegible] -6

April [illegible] -6[illegible]

25	Clay	12 ft
26	Sand	24 ft
27	"	22 "
28	"	20 "
1	"	20
2	"	12
3	"	8
4	Gravel	3
5	"	4
		125

Painters

6	Sand	24
7	"	32
8	Clay	8
9	"	18
		82

10	Sand	12
11	"	20
12	"	22
15	"	12
16	"	8
		74

Oxwellers

acid	1 Pint.
Solder	6 1/2 lbs
Rivets	4 1/2 "
Joints	6 2 - 6" joints
Gasoline	2 1/2 gal

Painters

acid	1 Pint
Solder	1 lbs
Rivets	2 1/2 lbs
Gasoline	1 gal
Joints	28

Painters

acid	1 1/2 pints
Solder	3 lbs
Rivets	2 "
Gasoline	1 1/2 gal

0381